FILE NAME: Oil Industry and American Petroleum Institute (API)

DATE: 0000

DOC#: API123

DOCUMENT DESCRIPTION: Excerpt - US Dept of Labor Bulletin - Respiratory Protective Equipment

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SAFETY IN INDUSTRY | Environmental and Chemical Hazards No. 3

BULLETIN 226

Respiratory Protective Equipment



U.S. DEPARTMENT OF LABOR
Arthur J. Goldberg, Secretary
BUREAU OF LABOR STANDARDS
Arthur W. Motley, Director

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(2) Fibrosis-producing dusts, or other pneumoconiosis-producing dusts that are not taken up by the blood stream but remain in the lungs and may cause significant pulmonary impairment. Examples are:

asbestos	calcined diatomaceous earth
coal	free silica (quartz, flint,
bauxite	sandstone, agate)

(3) Nontoxic and nonfibrosis-producing particles (so-called nuisance dusts and mists) that may dissolve and pass directly into the blood stream or may remain in the lungs producing neither local nor systemic effects. Examples are:

cotton	fur
grain	pollen
feathers	wood
flour	wool

It should not be assumed that all nontoxic and nonfibrosis-producing dusts are necessarily harmless. Many such dusts may be irritating or are allergy-producing to susceptible persons. And extremely high concentrations of any dusts should be viewed with suspicion.

Particulate contaminants may be classified further, according to their physical properties, in three broad groups:

(1) solid, such as dusts and fumes;

(2) liquid, such as mists and fogs; and

(3) a combination of solid and liquid, such as silica-water sprays and paint sprays.

The majority of particulate contaminants are not immediately dangerous to life; that is, days, weeks, or even years of exposure may elapse before harmful effects are noted. Notable exceptions are dusts and mists containing the organic phosphorous insecticides which, if present in high concentration, may incapacitate or even kill a man in a very short time. As in the case of gaseous contaminants, all processes producing particulate contaminants should be thoroughly investigated for possible harmful exposures.

Combination of Gaseous and Particulate Contaminants

In addition to atmospheres containing gaseous or particulate contaminants, there are those in which both types occur simultaneously. The contaminants may be entirely different substances, such as carbon monoxide and oxides of nitrogen produced by blasting and the dust from the blasted material, or they may be the same substances in liquid

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